

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (*Currently Amended*) A method for dividing upstream timeslots in a multiple access system ~~comprising that couples a line terminator coupled to via a tree-like network to a plurality of network terminators, said line terminator distributing and that distributes downstream data packets by said line terminator to said plurality of network terminators, wherein said method comprises including the steps of:~~

inserting a grant associated with one of said plurality of network terminators into said downstream packets, wherein said line terminator inserts said grant (LT) including at a predefined location place in a downstream data packet, a grant associated with one of said plurality of network terminators and distributing said downstream packet, and

transmitting an upstream packet in one of a plurality of first or second predefined upstream timeslots, wherein a plurality of said second predefined upstream timeslots are interposed between each of said first predefined upstream timeslot, and wherein each one of said network terminators transmits transmitting an upstream data packet in a predefined upstream timeslot in response to reception and recognition of its associated own grant, wherein transmitting further comprises:

~~characterised in that said step of transmitting includes,~~

transmitting ~~an~~ said-upstream data-packet in a first predefined lower order
timeslot ~~if in the event when said one of~~ said network terminator recognizing its associated grant
~~terminators~~ is a lower order network terminator and said predefined location is a non-idle
grantplace is a predefined first place,

transmitting ~~an~~ said-upstream data-packet in one of said second predefined a
plurality of higher order-timeslots ~~if in the event when said one of~~ said network terminator
recognizing its associated grant ~~terminators~~ is a higher order network terminator and said
predefined location is a non-idle grantplace is a predefined first place, ~~said higher order timeslots~~
~~being subslots of a predefined number of higher order subslots included in said predefined~~
~~upstream-timeslot, and~~

transmitting ~~an~~ said-upstream data-packet in one of said second predefined
timeslots ~~if a said higher order timeslot in the event when said one of~~ said network terminator
recognizing its associated grant ~~terminators~~ is a higher order network terminator and said
predefined location is an idle grantplace is a predefined second place.

2. (*Currently Amended*) A line terminator for ~~realising~~ division of upstream timeslots in a
time division multiple access system comprising that couples ~~said line terminator~~ coupled ~~via a~~
~~tree-like network~~ to a plurality of network terminators and wherein said line terminator (~~LT~~)
distributes downstream data-packets to said plurality of network terminators, said line terminator
comprising:

an insertion device that inserts ~~adapted to include in a downstream data packet at a predefined first place~~ a grant associated with one of said plurality of network terminators in a downstream packet at a predefined first location associated with non-idle grants, wherein if said network terminator ~~characterized in that~~

~~said insertion device is further adapted in the event when one of said plurality of network terminators~~ is a higher order network terminator, said insertion device includes a grant to include at a predefined second location place of said downstream data packet associated with idle grants ~~a grant being associated with said one of said plurality of network terminators.~~

3. (*Currently Amended*) A network terminator for use ~~in~~ a time division multiple access system, said network terminator being one of a plurality of network terminators coupled to that couples a line terminator, via a tree-like network to a plurality of network terminators including said network terminator said network terminator comprising:

recognition means that recognize an associated ~~a transmitter to recognise its own~~ grant in a downstream packet sent from said line terminator to said network terminator, and

transmitting means to transmit a data packet in a predefined upstream timeslot upon recognition of said associated own grant, wherein

~~characterised in that~~ said network terminator transmits ~~is adapted to transmit upstream data packets at a higher order data packet rate, and that therefor~~

said recognition means recognizes its associated ~~is further adapted to recognise its own~~ grant at a predefined first location place associated with non-idle grants and ~~that~~ said transmitting

means ~~transmits a packet~~^{is adapted}, upon recognition by said recognition means of said associated ~~own~~ grant at said predefined first ~~location~~, ~~place to transmit data packet~~ in one of a plurality of higher order timeslots, ~~wherein said predefined upstream timeslot comprises said higher order timeslots being a subslot of a predefined number of higher order timeslotssubslots included in said predefined upstream timeslot~~, and

said recognition means ~~recognizing~~ ^{being further adapted to recognise} its ~~associated own~~ grant at a predefined second ~~location~~ ^{place associated with idle grants}, and ~~that~~ said transmitting means ~~transmits a packet~~^{is further adapted}, upon recognition by said recognition means of said ~~associated own~~ grant at said predefined second ~~location~~ ^{place}, ~~to transmit said data packet in one of a said higher order timeslot~~.

4. (*Currently Amended*) A method according to claim 1, ~~wherein characterized in that~~ said time division multiple access system is a Passive Optical Network (~~PON~~) system and that said downstream data packets are Physical Layer Operation and Maintenance (~~PLOAM~~) cells.

5. (*Currently Amended*) A method according to claim 4, ~~wherein characterized in that~~ said first ~~predefined location~~ ^{predetermined place} is a location within said Physical Layer Operation ~~and Maintenance (PLOAM) cells reserved for non-idle grants as specified in the ITU-T Recommendation G.983.1~~, whereas said second ~~predefined location~~ ^{predetermined place} is a location within said Physical Layer Operation and Maintenance (~~PLOAM~~) cells reserved to idle grants as specified in the ITU-T Recommendation G.983.1.

6. (*New*) A method for dividing upstream timeslots in a multiple access system comprising a line terminator coupled to a plurality of network terminators, said line terminator distributing downstream packets to said plurality of network terminators, wherein said method comprises:

inserting a grant associated with one of said plurality of network terminators into said downstream packets, wherein said line terminator inserts said grant at a predefined location within said downstream packets, and

transmitting an upstream packet in one of a plurality of first or second predefined upstream timeslots, wherein n number of said second predefined upstream timeslots are interposed between each of said first predefined upstream timeslot, and wherein each of said network terminators transmits an upstream packet in response to reception and recognition of its associated grant, wherein transmitting further comprises:

transmitting an upstream packet in a first predefined timeslot if said network terminator recognizing its associated grant is a low data rate network terminator and said predefined location is a non-idle grant location,

transmitting an upstream packet in one of said second predefined timeslots if said network terminator recognizing its associated grant is a high data rate network terminator and said predefined location is a non-idle grant location, and

transmitting an upstream packet in one of said second predefined timeslots if said network terminator recognizing its associated grant is a high data rate network terminator and said predefined location is an idle grant location.

7. *(New)* The method as claimed in claim 6, wherein the time period of n number of second predefined upstream timeslots is equal to the time period of one first predefined upstream timeslot.

8. *(New)* The method as claimed in claim 6, wherein said downstream packets are Physical Layer Operation and Maintenance cells.

9. *(New)* The method as claimed in claim 8, wherein said predefined locations for non-idle grants and for idle grants in said Physical Layer Operation and Maintenance cells are specified in the ITU-T Recommendation G.983.1.

10. *(New)* A line terminator as claimed in claim 2, further comprising a queuing means that provides said grant for inclusion in said downstream packet to said insertion device based on bandwidth requests.

11. *(New)* The method as claimed in claim 2, wherein said downstream packets are Physical Layer Operation and Maintenance cells.

12. *(New)* The method as claimed in claim 11, wherein said predefined first location in said Physical Layer Operation and Maintenance cells is specified in the ITU-T Recommendation G.983.1 and said predefined second location in said Physical Layer Operation and Maintenance cells is specified in the ITU-T Recommendation G.983.1.